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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Lettuce (*Lactuca sativa* L.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country)		FOR OFFICIAL USE ONLY
		PVPO NUMBER

Place the appropriate number that describes the varietal character in the boxes below. Place a zero in the first box (e.g.

0	9	9
---	---	---

 or

0	9
---	---

) when number is either 99 or less or 9 or less. Measured data should be the mean of an appropriate number (at least 20) of well space plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The Location of the Test Area is:

Color System Used:

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties, which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Application Variety (a1) _____ Most Similar Variety (c1) _____

Standard Regional Check Variety (c2) _____

1. PLANT TYPE: (See List of Suggested Check Varieties on Page 8)

01 = Cutting/Leaf
02 = Butterhead
03 = Bibb

04 = Cos or Romaine
05 = Great Lakes Group
06 = Vanguard Group

07 = Salinas Group
08 = Eastern (Ithaca) Group
09 = Stem

10 = Latin
11 = Other (Specify) _____

(a1)

--	--

(c1)

--	--

(c2)

--	--

2. SEED:

(a1)

--

 } COLOR
(c1)

--

 } 1 = White (Silver Gray)
(c2)

--

 } 2 = Black (Grey Brown)
3 = Brown (Amber)

(a1)

--

 } LIGHT DORMANCY
(c1)

--

 } 1 = Light Required
(c2)

--

 } 2 = Light Not Required

(a1)

--

 } HEAT DORMANCY
(c1)

--

 } 1 = Susceptible
(c2)

--

 } 2 = Not Susceptible

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day-old seedling grown under optimal conditions.

SHAPE OF COTYLEDONS: 1 = Broad 2 = Intermediate 3 = Spatulate

(a1)

--

(c1)

--

(c2)

--

SHAPE OF FOURTH LEAF:

(a1)

--

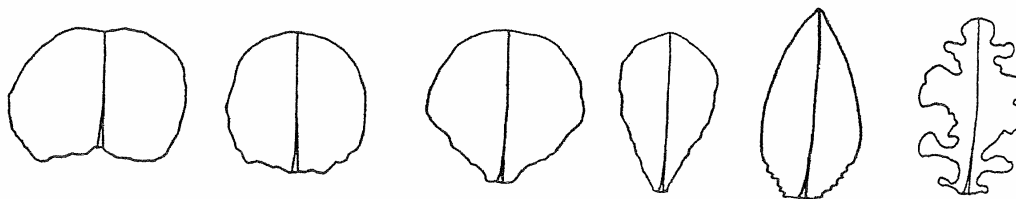
(c1)

--

(c2)

--

3. COTYLEDON TO FOURTH LEAF STAGE: (continued)



1.

2.

3.

4.

5.

6.

LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

(a1)

(c1)

(c2)

APICAL MARGIN:

1 = Entire

2 = Crenate/Gnawed

3 = Finely Dentate

4 = Moderately Dentate

5 = Coarsely Dentate

6 = Incised

7 = Lobed

8 = Other (Specify) _____

(a1)

(c1)

(c2)

BASAL MARGIN: (Use the options for Apical Margin above)

(a1)

(c1)

(c2)

UNDULATION:

1 = Flat

2 = Slight

3 = Medium

4 = Marked

(a1)

(c1)

(c2)

GREEN COLOR:

1 = Yellow Green

2 = Light Green

3 = Medium Green

4 = Dark Green

5 = Blue Green

6 = Silver Green

7 = Grey Green

(a1)

(c1)

(c2)

ANTHOCYANIN:

DISTRIBUTION:

1 = Absent

2 = Margin Only

3 = Spotted

4 = Throughout

5 = Other (Specify) _____

(a1)

(c1)

(c2)

CONCENTRATION:

1 = Light

2 = Moderate

3 = Intense

(a1)

(c1)

(c2)

ROLLING:

1 = Absent

2 = Present

(a1)

(c1)

(c2)

CUPPING:

1 = Uncupped

2 = Slight

3 = Markedly

(a1)

(c1)

(c2)

REFLEXING:

1 = None

2 = Apical Margin

3 = Lateral Margins

(a1)

(c1)

(c2)

4. MATURE LEAVES (Observe Harvest-Mature Outer Leaves)

NOTE: Provide color photo of a harvest-mature leaf which accurately shows color and margin characteristics.

MARGIN:**INCISION DEPTH:**
(deepest penetration
of the margin)

1 = Absent/Shallow (Dark Green Boston)

2 = Moderate (Vanguard)

3 = Deep (Great Lakes 659)

(a1)

☐

(c1)

☐

(c2)

☐**INDENTATION:** (Finest divisions of the margin)

1 = Entire (Dark Green Boston)

2 = Shallowly Dentate (Great Lakes 65)

3 = Deeply Dentate (Great Lakes 659)

4 = Crenate (Vanguard)

5 = Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐**UNDULATIONS OF THE
APICAL MARGIN:**

1 = Absent/Slight (Dark Green Boston)

3 = Strong (Great Lakes 659)

2 = Moderate (Vanguard)

(a1)

☐

(c1)

☐

(c2)

☐**GREEN COLOR:**

1 = Very Light Green (Bibb)

2 = Light Green (Minetto)

3 = Medium Green (Great Lakes)

4 = Dark Green (Vanguard)

5 = Very Dark Green

6 = Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐**ANTHOCYANIN:****DISTRIBUTION:**

1 = Absent

2 = Margin Only (Big Boston)

3 = Spotted (California Cream Butter)

4 = Throughout (Prize Head)

5 = Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐**CONCENTRATION:**

1 = Light (Iceberg)

2 = Moderate (Prize Head)

3 = Intense (Ruby)

(a1)

☐

(c1)

☐

(c2)

☐**SIZE:**

1 = Small

2 = Medium

3 = Large

(a1)

☐

(c1)

☐

(c2)

☐**GLOSSINESS:**

1 = Dull (Vanguard)

2 = Moderate (Salinas)

3 = Glossy (Great Lakes)

(a1)

☐

(c1)

☐

(c2)

☐**BLISTERING:**1 = Absent/Slight
(Salinas)2 = Moderate
(Vanguard)3 = Strong
(Prize Head)

(a1)

☐

(c1)

☐

(c2)

☐**LEAF THICKNESS:**

1 = Thin

2 = Intermediate

3 = Thick

(a1)

☐

(c1)

☐

(c2)

☐**TRICHOMES:**

1 = Absent (Smooth)

2 = Present (Spiny)

(a1)

☐

(c1)

☐

(c2)

☐**5. PLANT:****SPREAD OF FRAME LEAVES:**

(a1)

☐

cm

(c1)

☐

cm

(c2)

☐

cm

5. PLANT: (continued)**HEAD DIAMETER:** (Market Trimmed with Single Cap Leaf)(a1) cm(c1) cm(c2) cm**HEAD SHAPE:**

1 = Flattened

2 = Slightly Flattened

3 = Spherical

4 = Elongate

5 = Non-Heading

6 = Other (Specify) _____

(a1) (c1) (c2) **HEAD SIZE CLASS:**

1 = Small

2 = Medium

3 = Large

(a1) (c1) (c2) **HEAD PER CARTON:**(a1) (c1) (c2) **HEAD WEIGHT:**(a1) g.(c1) g.(c2) g.**HEAD FIRMNESS:**

1 = Loose

2 = Moderate

3 = Firm

4 = Very Firm

(a1) (c1) (c2) **6. BUTT:****SHAPE:**

1 = Slightly Concave

2 = Flat

3 = Rounded

(a1) (c1) (c2) **MIDRIB:**

1 = Flattened (Salinas)

2 = Moderately Raised

3 = Prominently Raised (Great Lakes 659)

(a1) (c1) (c2) **7. CORE:****DIAMETER AT BASE OF HEAD:**(a1) mm(c1) mm(c2) mm**RATIO OF HEAD DIAMETER/CORE DIAMETER:**(a1) .(c1) .(c2) .**CORE HEIGHT FROM BASE OF HEAD TO APEX:**(a1) mm(c1) mm(c2) mm**8. BOLTING:** (Give First Water Date: _____) NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

NUMBER OF DAYS FROM FIRST WATER DATE TO SEED STALK EMERGENCE: (summer conditions)

(a1) (c1) (c2) **BOLTING CLASS:**

1 = Very Slow

2 = Slow

3 = Medium

4 = Rapid

5 = Very Rapid

(a1) (c1) (c2) **HEIGHT OF MATURE SEED STALK:**(a1) cm(c1) cm(c2) cm

8. BOLTING: (continued)**SPREAD OF BOLTER PLANT:** (At widest point)(a1) cm(c1) cm(c2) cm**BOLTER LEAVES:**

1 = Straight

2 = Curved

(a1) (c1) (c2) **MARGIN:**

1 = Entire 2 = Dentate

(a1) (c1) (c2) **COLOR:**

1 = Light Green

2 = Medium Green 3 = Dark Green

(a1) (c1) (c2) **BOLTER HABIT:****TERMINAL INFLORESCENCE:**

1 = Absent

2 = Present

(a1) (c1) (c2) **LATERAL SHOOTS:**

1 = Absent

2 = Present

(a1) (c1) (c2) **BASAL SIDE SHOOTS:**

1 = Absent

2 = Present

(a1) (c1) (c2) **9. MATURITY:** (earliness of harvest-mature head formation)

NOTE: Complete this section for at least one season.

SEASON	APPLICATION VARIETY			MOST SIMILAR VARIETY			STANDARD REGIONAL CHECK VARIETY		
	No. of Days ¹			No. of Days ¹			No. of Days ¹		
Spring									
Summer									
Fall									
Winter									

¹ First Water Date to Harvest

Give Planting Date(s) and Location(s):

Spring: _____

Summer: _____

Fall: _____

Winter: _____

10. ADAPTATION:**PRIMARY REGIONS OF ADAPTATION** (tested and proven adapted):

0 = Not Tested

1 = Not Adapted

2 = Adapted

☐

Southwest (CA and/or AZ desert)

☐

West Coast

☐

Northeast

☐

North Central

☐

Southeast

☐

Other (Specify) _____

10. ADAPTATION: (Continued)**SEASON:**

<input type="checkbox"/> Spring	(Area _____)	<input type="checkbox"/> Fall	(Area _____)
<input type="checkbox"/> Summer	(Area _____)	<input type="checkbox"/> Winter	(Area _____)

<input type="checkbox"/>	GREENHOUSE:	0 = Not Tested	1 = Not Adapted	2 = Adapted
<input type="checkbox"/>	SOIL TYPE:	1 = Mineral	2 = Organic	3 = Both

11. VIRAL DISEASES:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Big Vein	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Lettuce Mosaic	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Cucumber Mosaic	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Tomato Bushy Stunt, cause of dieback	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Turnip Mosaic	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Beet Western Yellows	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Lettuce Infectious Yellows	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

12. FUNGAL/BACTERIAL DISEASES:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Corky Root Rot (Races: _____)	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Downy Mildew (Races: _____)	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Powdery Mildew	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Sclerotinia Drop	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Bacterial Soft Rot (<i>Pseudomonas</i> spp. and others)	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Botrytis (Grey Mold)	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Verticillium Wilt	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Bacterial Leaf Spot	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Anthracnose	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

13. INSECTS:

1 = Immune 3 = Resistant 5 = Moderately Resistant/Moderately Susceptible 7 = Susceptible 9 = Highly Susceptible

Cabbage Loopers	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Root Aphids	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Green Peach Aphid	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Lettuce Aphid	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Pea Leafminer	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>
Other (Specify) _____	(a1)	<input type="checkbox"/>	(c1)	<input type="checkbox"/>	(c2)	<input type="checkbox"/>

14. PHYSIOLOGICAL STRESSES:

1 = Immune	3 = Resistant	5 = Moderately Resistant/Moderately Susceptible	7 = Susceptible	9 = Highly Susceptible
Tipburn	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Heat	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Drought	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Cold	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Salt	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Brown Rib (Rib Discoloration, Rib Blight)	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Other (Specify) _____	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	

15. POST HARVEST STRESS:

1 = Immune	3 = Resistant	5 = Moderately Resistant/Moderately Susceptible	7 = Susceptible	9 = Highly Susceptible
Pink Rib	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Russet Spotting	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Rusty Brown Discoloration	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Internal Rib Necrosis (Blackheart, Grey Rib, Grey Streak)	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	
Brown Stain	(a1) <input type="checkbox"/>	(c1) <input type="checkbox"/>	(c2) <input type="checkbox"/>	

16. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:**17. COMMENTS:**

SUGGESTED CHECK VARIETIES

	TYPE	CHECK VARIETY
1	Cutting/Leaf	Waldmann's Green
2	Butterhead	Dark Green Boston
3	Bibb	Bibb
4	Cos or Romain	Parris Island
5	Great Lakes Group	Great Lakes 659-700
6	Vanguard Group	Vanguard
7	Salinas Group	Salinas
8	Eastern Group	Ithaca
9	Stem	Celtuce
10	Latin	Little Gem

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